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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,932

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EXAMINER

VERBRUGGE, KEVIN

ART UNIT

PAPER NUMBER

2189

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/716,932	<b>Applicant(s)</b> CORRADO ET AL.	
	<b>Examiner</b> Kevin Verbrugge	<b>Art Unit</b> 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-17,19-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-17,19-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

This final Office action is in response to the remarks and amendment submitted 1/22/08 which amended claim 27. Claims 1, 3-9, 11-17, 19-25, and 27-29 are pending. No changes have been made in the rejections which are repeated and made final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-9, 11-17, 19-25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,732,230 to Johnson et al. in view of U.S. Patent 5,615,352 to Jacobson et al.

Regarding claims 1, 9, 17, and 25, Johnson discloses a method of automatically migrating information from a source to an assemblage of structured data carriers (partial title). His invention addresses the same problem presented by Applicants: the conventional method of converting a non-RAID hard disk into a RAID disk array required a large, external separate backup device (see Fig. 1, column 1, lines 22-28, and column 5, line 49 to column 6, line 5).

Johnson's device automatically migrates information from a non-RAID source data carrier 100 to a new RAID array 34 (see Fig. 2 and column 6, lines 24-34). During this process, Johnson's device carries out the claimed issuing of read and write requests since data is read and written as it is migrated.

Johnson does not explicitly mention whether his system permits operating system processes to receive or issue requests to access other portions of the data while the reading and writing are occurring. However, he teaches that his migration occurs "automatically" and "independently" (see column 6, line 25; column 7, line 46; column 7, line 65 through column 8, line 9; column 8, line 67 through column 9, line 4; column 10, line 66 through column 11, line 2; column 14, lines 42-46), implying that his system permits operating system processes to receive and issue requests to access data while the reading and writing of the migration are occurring. In other words, since the migration is automatic and independent of the operating system processes, it is likely that the operating system processes are allowed to access the data while the reading and writing of the migration is going on.

In any case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to permit the operating system processes to access the data while the reading and writing of the data migration is happening because that provides a more accessible source of data to the user. Preventing the user from accessing the data during migration might cause unacceptable delays in providing the desired information and the skilled artisan would obviously make every effort to avoid such inconvenience.

Jacobson discloses methods for adding storage disks to a hierarchic disk array while maintaining data availability (title). The details of his technique are not as relevant here as the general teaching that “data remains available to the user at all times during the enlargement process” (abstract, last line). Other places where Jacobson teaches that data remains available during system reconfiguration include column 2, lines 6-8 and 45-50, column 3, lines 14-21, and column 12, lines 54-61.

Jacobson explicitly discusses the same problem with the prior art as that disclosed by Applicant at paragraph 0003 in the specification, namely transferring data to a backup device renders it unusable until the migration has completed (see Jacobson at column 1, line 56 through column 2, line 2). There he teaches that “the disk array is not accessible during this process and the data, which has been temporarily transferred to a separate backup system, is unavailable.” Clearly this is a disadvantage of the prior art and Jacobson’s system overcomes this and makes data available even during the migration.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to permit the operating system processes to access other data in the non-RAID volume of Johnson’s device while the reading and writing of his data migration is occurring because that provides a more accessible source of data to the user. The skilled artisan would be motivated to modify Johnson’s device because Jacobson teaches data availability is important. There is a reasonable expectation of success because both references deal with data migration techniques and improvements over the prior art system which had a large backup device which

Art Unit: 2189

rendered data unavailable during migration. When combined, the references teach all the claim limitations. Therefore a prima facie case for obviousness has been established.

Regarding claims 3, 4, 11, 12, 19, and 20, Johnson clearly mentions parity check data at column 3, lines 15-49 and column 11, line 27.

Regarding claims 5, 13, and 21, Johnson's storage devices are mass storage devices as claimed.

Regarding claims 6-8, 14-16, and 22-24, Johnson discloses the claimed operations throughout his disclosure (see for example, column 6, lines 28-34; column 12, lines 45-51; column 13, lines 49-62; and column 14, lines 38-46).

Regarding claims 27-29, Johnson does not mention the claimed circuit board elements, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include them in Johnson's system as typical circuit board components commonly found in computer systems like Johnson's.

### ***Response to Arguments***

Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive. Applicant argues at the bottom of page 8 that to establish a prima facie

case for obviousness, 1) there must be some suggestion or motivation to combine reference teachings, 2) there must be a reasonable expectation of success, and 3) the references when combined must teach or suggest all the claim limitations.

Applicant then continues by only arguing 3), as evidenced by the heading at the top of page 9 ("The references when combined ...") so it is presumed that Applicant agrees 1) and 2) are met.

In any case, 1) is met by the teaching of Johnson that his migration is performed "automatically" and "independently", as discussed above, clearly implying that other read and write operations are performed during the automatic and independent migration process. Alternatively, 1) is met by the clear motivation for the skilled artisan to keep a user's data accessible at all times, even during large data migrations, as taught by Jacobson as discussed above. Few users are willing to tolerate their data being inaccessible so the skilled artisan is motivated to keep it accessible at all times by whatever means possible. Jacobson clearly teaches keeping data accessible during large data migrations.

Additionally, 2) is met by the clear expectation that the skilled artisan has a reasonable expectation of success when modifying Johnson's device to keep data accessible just as Jacobson's device keeps data accessible. Both devices are directed to large storage systems with large data migrations. Clearly the skilled artisan would expect to be able to implement Jacobson's data availability techniques in Johnson's system.

Finally, 3) is met by the combination of the migration which Johnson clearly performs with the data availability technique which Jacobson clearly teaches. Johnson teaches migrating from a non-RAID system to a RAID system, and Jacobson teaches keeping data available during data migrations. One skilled in the art would have been motivated to modify Johnson's device using the teachings of Jacobson to allow access to the data during Johnson's migration from a non-RAID volume to a RAID volume for the simple reason that users demand continuous data availability, even during migrations, as clearly taught by Jacobson. Nothing more is required in the independent claims.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Any inquiry concerning this Office action should be directed to the Examiner by phone at (571) 272-4214.

Any response to this Office action should be labeled appropriately (including serial number, Art Unit 2189, and type of response) and mailed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, hand-carried or delivered to the Customer Service Window at the Randolph Building, 401 Dulany Street, Alexandria, VA 22313, or faxed to (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

/Kevin Verbrugge/

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Art Unit 2189